

School of Human Movement, Sport, and Leisure Studies
Kinesiology Division
Exercise Science Program, Summary of Assessment Accomplishments
2007-2008 Academic Year

Submitted by: Lynn A. Darby, Ph.D.

Date: July 15, 2008

Exercise Science Program Description

This major is a broad-based, scientific course of study in human movement. Students choose one of two specializations. Students in the *Exercise Programming Specialization* are prepared for careers in exercise testing and prescription. The capstone experience is a 600-hour internship in private or corporate fitness centers, sports medicine clinics, allied medical and/or cardiac rehabilitation settings, recreation centers, and/or athletic or Olympic training facilities and programs. The *Human Movement Specialization* includes cognates of study and culminates with the capstone experience of a senior research project during which each student works closely with a Kinesiology Division faculty member on faculty or student research. The *Human Movement Specialization* should appeal to students with broad vocational interests in kinesiology, physical education, exercise, sport, allied health and medical fields, and sports medicine.

Exercise Science Program Learning Outcomes

Upon completion of the baccalaureate degree, students in the Exercise Science program are expected to:

- Understand the interdisciplinary nature of kinesiology;
- Observe, analyze, and critique various movement patterns and their outcomes, integrating the information from the subdisciplines of kinesiology;
- Demonstrate proficiency in computer utilization (word processing, Web-based research, spreadsheet, and exercise-physiology-related software) and verbal and oral communication;
- Demonstrate attainment of a high level of personal well-being (physically, mentally, emotionally, socially and spiritually) and personal excellence in an active and healthy lifestyle;
- Display clear, logical thinking in their writing and speaking;

Exercise Programming Specialization Outcomes

- Display knowledge, skills, and abilities to screen, test, prescribe, motivate, counsel, educate, and individualize muscular strength and endurance, cardiorespiratory training, and/or other physical fitness and lifestyle programs for normal and special populations;
- Understand the scientific bases of exercise programming, not limited to but including exercise physiology, human anatomy, biomechanics, care and prevention of injuries, safety and emergency procedures, and basic cardiopulmonary resuscitation and first aid for exercise settings;

- Demonstrate use of administrative content, and facilities and equipment information in exercise programming;

Human Movement Specialization Outcomes

- Identify and address key research question to be answered in kinesiology;
- Understand how to design, implement, and analyze research procedures to study research problems in kinesiology.

The Exercise Science major was approved during 2006-2007 for admission of students beginning in August 2007. This major had previously been offered as two majors: Exercise Specialist and Human Movement Science and were combined so that a contemporary name of Exercise Science with two specializations could be formed.

Annual Report

During 2007-2008 students began enrolling in or transferring to the reconfigured Exercise Science major. During 2006-2007 curricular modifications were approved to combine the former Exercise Specialist major and the Human Movement Science major. Since this combination two benefits have been observed: 1) an increase in the number of majors; 2) students reporting that they like the flexibility that is included for the selective courses unlike the previous checksheet(s). During this academic year the faculty have been further discussing the Exercise Science program and described it for the Compact planning in the fall of 2007. They concluded that the Exercise Science program at BGSU was unique in four ways:

- A. Academic rigor with a comprehensive curriculum,
- B. Experiential learning experiences in laboratories with state-of-the art equipment,
- C. Faculty focused on student needs for advising, career planning and placement, etc.,
- D. Substantial culminating experiences – Internships and Senior Research Projects.

Faculty conclusions were based on the following information:

- A. Academic rigor with a comprehensive curriculum, as evidenced by:
 - » Program recognition from the National Strength and Conditioning Association (NSCA) (<http://www.nasca-lift.org/>).
 - » Preparation and projected final submission of accreditation materials to the Committee on the Accreditation of the Exercise Sciences of CAAHEP (Commission on Accreditation of Allied Health Education Programs) (<http://www.caahep.org/>), the largest programmatic accreditor in the health sciences field and recognized by the Council for Higher Education Accreditation (CHEA).
 - » Faculty with doctorates in the subdisciplines of exercise science who work directly with students in course activities, advising, and the Kinesiology Club (e.g., KNS Club “Cornhole for Cancer fundraiser that raised \$700 for the American Cancer Society).
 - » Faculty who wish to work at BGSU where they can teach bachelors and masters degree students and involve these students in their research projects that serve

northwest Ohio.

- B. Experiential learning experiences in laboratories with state-of-the art equipment, Of the 57 credit hours (15 courses) that students complete in Kinesiology Division courses specific to exercise science, 12 of the courses have laboratories or field experiences. The ES faculty recognize that students are visual and participatory learners. ES students often comment that they appreciate the opportunities afforded to them in laboratories. The extensive space, exercise science equipment available for student use, and faculty and teaching assistant supervision make for unique BG teaching and learning experiences in exercise science.
- C. Faculty focused on student needs for advising, career planning and placement, etc., Exercise Science faculty typically advise 30-50 undergraduate students. Faculty have an open door policy and meet often with students to discuss field experiences, career options, and academic progress. This is not typically done at other universities where group advising is the only option offered.
- D. Substantial culminating experiences – Internships and Senior Research Projects. The internship (15 credit hours) for the Exercise Science majors emanated from the nationally know Sport Management program. This academic experience for students in the exercise programming track includes production of a portfolio, and an in-depth project, as well as completion of 600 clock hours of practical experience. This is an intense culminating experience. Faculty visit on-site with students and supervisors at the hospital, fitness, or exercise agency to interact directly with supervisors and students.

1. Learning (or Service) Outcomes assessed this year:

During this academic year the Exercise Science faculty focused on the specialization learning outcomes that were associated with performance in the capstone experiences of KNS 489 – Internship in Exercise Specialist for the *Exercise Programming Specialization* and KNS 481 – Senior Project for the *Human Movement Specialization*.

These learning outcomes were:

Exercise Programming Specialization

- Display knowledge, skills, and abilities to screen, test, prescribe, motivate, counsel, educate, and individualize muscular strength and endurance, cardiorespiratory training, and/or other physical fitness and lifestyle programs for normal and special populations;

Human Movement Specialization

- Understand how to design, implement, and analyze research procedures to study research problems in kinesiology.

2. Assessment Methods and Procedures:

Internal Assessments:

As students finish their capstone course for the *Exercise Science Specialization*, KNS 489 – Internship in Exercise Specialist, each student is evaluated by their University supervisor with input from their agency (i.e., site supervisor). Data were gathered from the midterm and/or final evaluations that are scored on a 10-point scale for nine performance areas. The mean and standard deviations for the site supervisor’s rating of the interns (N=18; n=14 for data analyses) who completed KNS 489 – Internship in Exercise Specialist during Summer 2007, Fall 2007, and Spring 2008 are shown below.

	Mean ± S.D.	Range
Ability to organize and carry out tasks:	8.0 ± 2.35	10 - 3
Quality of assigned work:	7.9 ± 1.5	10 - 6
Time management:	8.1 ± 1.5	10 - 5
Ability to communicate orally:	8.0 ± 1.3	10 - 5
Ability to communicate in writing:	8.6 ± 1.2	10 - 6
Dependability and responsibility:	8.4 ± 1.9	10 - 4
Initiative and enthusiasm:	7.7 ± 1.9	10 - 4
Professional appearance and behavior:	9.1 ± 1.0	10 - 7
Ability to accept and utilize suggestions to improve performance:	8.5 ± 1.4	10 - 6
TOTAL SCORE (possible 90 points)	73.9 ± 14.0	90 - 47
TOTAL SCORE (expressed as a percentage)	82 ± 16	

Sample open-ended comments from supervisors were:

- “Student” was a very good addition to our staff this semester. She could always be counted on especially if there was a sudden change in the schedule.
- “Student” was extremely well liked by the athletes. Parents were requesting her to train their child...She was definitely one of the better interns.
- We appreciated “student’s” time with us. I know it’s a big sacrifice. Thought “student” showed improvement in all areas. Just needs experience.
- “Student’s” performance was nothing but outstanding.
- “Student” has been one of the best interns we have had to date. Student is going to be a valuable asset for an organization.
- I have to say that overall, “Student” is among the best students we have had here in the last 12 yrs. I have been supervising student interns.
- Completes assigned tasks well, when given direction. Has a lot of potential, but needs direction and motivation about carrying out a task. I wasn’t fully aware of her internship requirements; however, student showed a lack of knowledge & skills compared to others at her level.

Capstone courses for the *Human Movement Specialization*, KNS 400 – Facilitating Movement Change in Tutorial settings and KNS 481 – Senior Project, include integrative research projects that serve as key ePortfolio artifacts and assessments. The Human Movement students routinely submit their KNS 400 and KNS 481 projects to the BGSU Undergraduate Research Conference during the spring semesters. These projects are individually assessed, and the Exercise Science faculty with leadership from Dr. Steve Langendorfer will be constructing an assessment rubric and expanding the ePortfolio for use with all Exercise Science students during 2008-2009.

Research projects completed under Dr. Langendorfer supervision have included:

Summer 2007:

- » J. Getz and E. Livas presented their work titled "*Effect of locomotor speed and target size on stride length*" which won the honorable mention from Sigma Xi. Their project was funded as part of the BGSU Summer Undergraduate Research program.
- » "*Screening kicking developmental sequences.*" By Brian Boyne, Alyssa Kerver, and Holly Koberna.

Spring 2008:

- » Mr. Kyle Swank completed the project titled, ""Effect of speed and fin use on the coordination of front crawl swimming.", and received a "State of Ohio Senatorial Citation" as a result of presenting his poster at "Posters at the State Capitol" (Columbus, Ohio) on April 18, 2008.
- » Josh Parrott and Justin Davenport also completed their senior project with a study entitled "*Prelongitudinal screening of foot dribbling.*"

In addition, Dr. Langendorfer has been working with the Human Movement Specialization students to pilot the EDAT assessment instrument (Experimental Design Ability Test in collaboration with Dr. Karen Sirium, Biological Sciences). Further testing of the instrument to assess students' academic progress in KNS 400 and/or KNS 481 will be completed in the coming year.

Table 1. EDAT Results (Pilot data, KNS 400, Spring 2008): S. Langendorfer, professor

Student	Pre score	Post Score	Change
J. B.	7.0	5.0	-2.0
J. D.	7.0	7.0	0
K. M.	4.0	6.0	+2.0
J. P.	5.0	6.0	+1.0
Class average	5.7	6.0	+0.25

External Assessments

The Exercise Science faculty members routinely obtain external feedback from exercise specialist students, agency field experience supervisors, and alumnae/i. The next survey will be administered during the curricular updates and reporting for the Commission on Accreditation of Allied Health Programs (CAAHEP) / Committee on Exercise Science (CoAES) review (Summer/Fall 2008).

However, data from the EDHD alumni/ae survey of 2005-2006 were available for this report. Four respondents (100% of the respondents) indicated were satisfied with their BGSU, EDHD, and Program experience. In addition, 83.3% indicated they were satisfied with advising, and 65% indicated that they were satisfied with the courses offered in the Exercise Specialist program. Seventy eight percent indicated that they were satisfied and 22% responded “very satisfied” with their employment preparation. Because there were only two Human Movement Science alums responding to the 2005-2006 survey, data were not provided from EDHD (i.e., 3 is the minimum number of respondents to generate data concerning an EDHD program).

Further occupational data from alums are provided in Table 2. During fall semester 2007 and the writing of the Exercise Science Compact report, a number of alums were contacted via email.

Table 2. Exercise Science Alums – Kinesiology Division; Internship Students from 2006-2007 and where they are now (collected from emails and faculty contacts, Fall 2007).

Molly Bauman - Employed at the BG Community Center (Personal Trainer and Teaches Classes); graduate student in Recreation and Leisure, Bowling Green State University
 Daniel Beeson - Completing internship
 Lindsay Carter - Mt. Carmel Hospital applicant; applying to Neonatal Nurse Practitioner Program, OSU
 Leslie Gleckler - Employed at Wood County Hospital Fitness Center, Wellness Works
 Erin Jalkanen - Employed by L&T Fitness, Corporate Fitness, Cleveland, Ohio
 Patty Leisure - Graduate School at Eastern Michigan University
 Andrea Pollack - Part Time at Wolf Creek YMCA and coaching in Michigan
 Megan Stark - Employed at Evolution Sports, Sport Specific Training, North Carolina
 Anthony Wilhelm – Just completed internship; applying for jobs in Texas
 Emily Jackson - Employed at The National Institute for Fitness and Sport, Indianapolis
 Greg Holmes - Employed at the Muirfield Golf Course Fitness Center, Dublin, Ohio
 Shane Sockrider - Employed at Verizon Wireless Corporate Fitness Center, Dublin, Ohio
 Monique Westinkirchner - Employed by L&T Fitness at Moen Corporate Fitness, Cleveland, Ohio
 Andy Sziraki- Employed by the Institute for Human Performance
 Ben Ridlon - Establishing Personal Training Business - Anytime Fitness, Perrysburg
 Jacob Wilkins – Working for Fitness Center of Toyota
 Jacob Smith - Graduate School and Cross Country Coach at SUNY Cortland
 Karla Bruggeman - Graduate School at Kansas State University
 Joe Zawack - Graduate School at Baylor University
 Jamie Bentley - Physical Therapy Program at the University of Findlay
 Katie Navarre - Chiropractic School
 Natalie Armintrout - Employed in Columbus, Strength and Conditioning Specialist
 Lane Bidlack - Employed at Powerline Fitness
 Amanda Bowen - Employed at Synergy Sports and Fitness
 Nicole Schoelein - taking preparatory courses at Ball State for Physician Assistant’s program
 Kelley Strohacker - Graduate Program, Exercise Immunology, University of Houston, TX
 Aaron Sule - *Dayton Daily News* and NCR - Fitness Professional
 Carl Samuel - Employed at Mercy Healthworks as a fitness specialist, St.Charles Hospital, Toledo

3. Inferences from Assessments:

- Currently, the Exercise Science major produces well-prepared students who are successful in their internship experiences, employment, and admission to continuing and professional education programs.

- Feedback from Internship and Practicum site supervisors often indicates that students from Bowling Green State University are well qualified and highly competent. Following completion of their internships, many students are offered employment at their internship site.
- Students choose field experiences and employment at a variety of sites (e.g., cardiac rehabilitation centers, health and wellness sites, sports medicine clinics for performance enhancement, fitness centers, etc.). Many students continue their education at graduate schools or in allied health profession programs.
- Professionals in this area need the knowledge and skills developed through completion of the Exercise Science major.

4. Actions Taken/Program Improvements:

The Exercise Science faculty members are involved actively in their professional organizations (i.e., ACSM, NSCA, etc.) and continue to revise and update the Exercise Science curriculum. The number of majors has increased (identified as an EDHD program with significant enrollment increases) and is projected to continue increasing with the name change to Exercise Science, a more readily recognized name for this content area. In addition, the Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2006-07 Edition*, has identified the broad category of Fitness Workers as an area for increased job opportunities in the future. In addition, there are a number of health-related occupations in the health care cluster of top 50 jobs in Ohio that related to and draw on students from the Exercise Science program (Ohio Workforce Informer, 2008).

Exercise Science program and course requirements have changed over the years (this content was first offered in the early 1980's) in order to balance the demands and rigors of the professional bodies that certify Exercise Science graduates, and the desire for "student choice and flexibility" in course selections. The Exercise Science program is currently certified and recognized by the National Strength and Conditioning Association. Over the next year accreditation review for the Exercise Science Program and faculty will be completed following the CAAHEP procedures. Over the next year an assessment of how the faculty meet and deliver the professional knowledges, skills, and abilities (KSA's) established for Exercise Science programs will assist the Exercise Science faculty in continuing to refine their learning outcomes and key assessments.

The following activities will be completed in 2008-2009 to continue to strengthen and improve the current Exercise Science program:

- The accreditation portfolio for the Commission on Accreditation of Allied Health Programs (CAAHEP) / Committee on Exercise Science (CoAES) will be completed for Exercise Science. This will take considerable time and effort. This will process will also culminate in updates of 3-5 program courses and a site visitation to BGSU by one to two examiners from CAAHEP.

- An assessment rubric will be developed and applied to one or two of the ePortfolio key artifact assessments in order to more directly assess the Exercise Science learning outcomes associated with courses of the Exercise Science major.

References

- American College of Sports Medicine. (2007). Website: <http://www.acsm.org>
- American College of Sports Medicine. (2007). *ACSM's Certification Resource Guide 2007*. Baltimore: Lippincott, Williams & Wilkins.
- American College of Sports Medicine. (2006). *ACSM's guidelines for exercise testing and prescription*. Philadelphia: Lippincott, Williams & Wilkins.
- American Society of Exercise Physiologists. (2007). <http://www.asep.org/>
- Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2006-07 Edition*, Fitness Workers, on the Internet at <http://www.bls.gov/oco/ocos296.htm> (visited July 02, 2007).
- Commission on Accreditation of Allied Health Programs. (2007). <http://www.caahep.org/>
- Committee on Accreditation for the Exercise Sciences (CoAES). (2007). <http://www.coaes.org/>
- National Strength and Conditioning Association. (2007). <http://www.nsca-lift.org/>
- Ohio Workforce Informer. (2008). <http://www.ohioworkforceinformer.org/cgi/databrowsing/?PAGEID=4>
- The Ohio Department of Job and Family Services. (2007). Occupational Trends. *Occupational Outlook Handbook*. 2006-2007 Edition.